

ABSTRACT

A sprinkler head having a first housing connected to a water supply pipe disposed inside a building ceiling. The sprinkler head includes a second housing coupled to the first housing and fixed to the ceiling surface. A deflector is adhered to the first housing for spraying water by being detached from the first housing. A locking unit is locked inside the second housing for maintaining the sealing state between the deflector and the second housing, and a heat responding unit is exposed to outside of the ceiling for sensing heat at the time of a fire occurrence and thus releasing a locking of the locking unit.

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
8 July 2004 (08.07.2004)

PCT

(10) International Publication Number
WO 2004/056422 A1

(51) International Patent Classification⁷: **A62C 37/08**

(21) International Application Number:
PCT/KR2003/002818

(22) International Filing Date:
23 December 2003 (23.12.2003)

(25) Filing Language: Korean

(26) Publication Language: English

(30) Priority Data:
20-2002-0038143
23 December 2002 (23.12.2002) KR

(71) Applicants (for all designated States except US):
PARADISE INDUSTRY CO., LTD. [KR/KR];
65-2, Chunui-Dong, Wonmi-Gu, 420-858 Bucheon,
Gyeonggi-Do (KR). **HATTORI, Tadashi** [JP/JP]; Clover
Heights Kinwada Berueru 607, 242-5, Gakuhara-Cho,
Kinwada-Shi., Osaka 596-0822 (JP).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **SHIM, Dae-Min**
[KR/KR]; Hyundai Apt. 203-703, 654, Gaepo-Dong,
Gangnam-Gu, Seoul 135-240 (KR).

(74) Agent: **PARK, Jang-Won**; Jewoo Bldg. 5th Floor, 200,
Nonhyun-Dong, Gangnam-Gu, Seoul 135-010 (KR).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR,
CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR,
KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN,
MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU,
SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

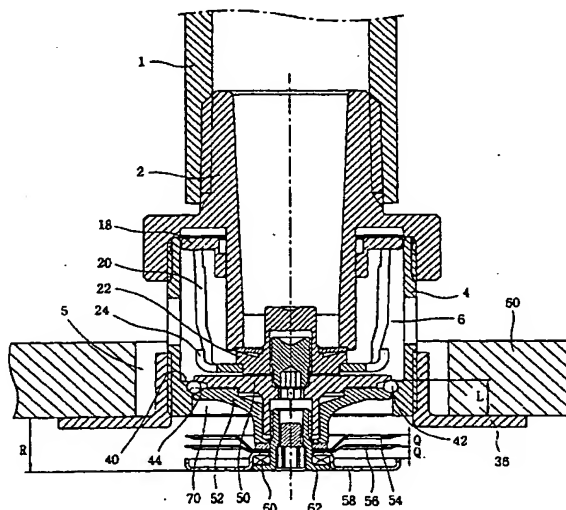
(84) Designated States (*regional*): ARIPO patent (BW, GH,
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,
SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA,
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **SPRINKLER HEAD**



(57) Abstract: A sprinkler head includes a deflector attached to a first housing in a sealing-available manner; a locking unit for maintaining a sealing state between the deflector and the first housing; and a heat collecting unit exposed from the ceiling and reacted to heat when a fire breaks out. A locking groove is formed in a circumferential direction at an inner side with a prescribed height from a lower surface of a second housing and an air flow collecting portion is formed at a lower portion of the second housing to collect air flow heated when a fire breaks out and generates a swirl flow. The exposure distance of the sprinkler head from the ceiling surface is minimized so as to be protected from an external impact, and a reaction speed in case of occurrence of a fire can be faster for a prompt fire suppression.

WO 2004/056422 A1